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ABSTRACT

Australian schooling is undergoing a revolution in structure, management, and organization brought about by the advent of information and communication technologies in educational settings. This paper emphasizes the value of relationships between universities and schools in enhancing the quality of educational services provided to learning communities, specifically rural communities. Examples of innovative partnerships in technology use related to the enhancement of education and teacher training in rural areas include: (1) an Australian program that integrated interactive CD-ROM technology with examples of good teaching practice to increase confidence in technology use for preservice and inservice teachers; (2) a joint project between three rural high schools and the University of Southern Queensland that helped teachers adapt to computer and Internet technology; (3) an interactive television system that enabled preservice teacher education students to observe and interact with teachers in small rural schools; (4) a Canadian university that placed interns in local schools to help them integrate technology into their curricula; (5) a Montana university that developed practicum partnerships with schools in New Zealand and Europe; (6) a distance education university in Scotland that allowed rural students to complete their education without leaving their communities; and (7) partnerships that enabled preservice teachers at the University of Southern Queensland to experience teaching in rural and remote locations. A recent Queensland (Australia) report outlines the need for educational partnerships, and key features of and barriers to successful partnerships. Contains 14 references. (TD)

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Partnerships, Technology and Teaching: Celebrating the Link Between Universities and Rural Communities.

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Abstract

In recognising the increasing pressure to contribute to the construction of a new paradigm of schooling appropriate for the new century, this paper discusses the impact of partnerships and technology on teaching and emphasises the value of relationships between universities and schools in enhancing the quality of educational services provided to learning communities and specifically, learners in rural communities. By referencing both current research and policy developments and presenting case studies related to innovations in organisational collaboration, technology use and the administration of programs, it is the intention of the authors to both raise awareness of existing examples of successful innovations which have led to excellence in education, and to provide a ready resource for those wishing to further their understanding of programs that have added value to the educational benefits derived by those learners involved. Celebrations of existing collections of successful innovations is referenced infrequently in the literature and it is the intention of this paper to overcome that deficit.

Introduction

Australian schooling is undergoing a revolution in structure, in management, and in organisation. In recognising these revolutions and the concomitant need to redefine the culture of schooling, many state level systems have undergone a massive series of restructuring exercises which have attempted to purge the old guard, traditionalist culture from the new reality of compulsory schooling appropriate for school education in the new millennium. The building blocks of this new culture of schooling are a combination of old and new influences. Clearly, the process of teaching remains central to this new culture, but in itself, the definition of what teaching is, has undergone tremendous change. No longer is it appropriate to consider teaching as an isolated activity largely conducted by one adult upon a group of students in the confines of a single classroom. Rather, it is the learning that occurs, which is the central element of this new culture

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Additionally, it is increasingly recognised that the responsibility for schooling goes far beyond the school fence. A symptom of this change appears as increased community involvement in

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school decision making. This sharing of responsibility has been in part, made possible by the advent of new communications technologies which have created opportunities for greater collaboration and networking and in part by the proliferation of successful partnerships between communities and agencies interested in enhancing education provision.

Further, in scanning the current literature related to partnerships, a variety of useful definitions is found creating a flexibility in partnership conception that provides few barriers to creative collaboration: an activity to achieve a professional outcome; formal legal agreements; loose associations; joint ventures. It would appear that there are as many attempts to explain partnerships as there are functioning partnership activities. What appears to be the common thread throughout these diverse orientations is that functioning and successful partnerships create a climate for innovation.

The majority of these characteristics of the new school culture is of course well known to rural community dwellers, for it is the focus on individuals and on community that define the core of many rural communities. Notwithstanding this rural reality however, it is likely that those in rural communities will stand to be the prime beneficiaries of the change resulting from this new orientation to schooling. While benefits will be felt by learners in all schools as a result of the infusion of appropriate technologies and increased involvement in schooling by community enterprises and supportive external partnerships, it is the learner in rural schools, gaining access to new resources, new partnerships and new communities, who will experience a proportionally larger impact than most.

It is the view of the authors of this paper, that it is the integration of these concepts of teaching, technology and partnerships, that is redefining the reality of schooling for the learner in the site based management, school community oriented world of Australian education in the late 1990s.

Literature

In April, 1995, the Office of Technology Assessment of the United States Congress published a report which focused upon the connection between teachers and technology. A major conclusion of this study was that inadequate attention had been paid to the analysis and development of teaching pedagogies associated with the use of teaching technologies and that inadequate developmental support provided to teachers barred the best use of new technologies in education. Further, the report went on,

technology, combined with suitably developed teaching and learning paradigms and properly trained teachers, offered a dramatic solution to problems of motivation, drop out, and flexible access to educational services and support for remote learners.

In Australia, recent developments in Federal government policy proposals regarding the nation-wide provision of access to communications and information networks and associated broadband services, imposed upon universities, and particularly Faculties of Education, the responsibility to ensure that appropriate teaching paradigms and pedagogies had been analysed, evaluated, developed and supported in institutions of higher learning, in association with the advent of the technologies themselves. This responsibility was clearly articulated in May, 1995 when a report commissioned by the Department of Employment, Education and Training, entitled National Policy Frameworks to Support the Integration of Information Technologies into University Teaching/ Learning, stated that "the new information technologies have significant implications for the nature and conduct of teaching and learning." (Moran, 1995, P2) and that universities should lead the way in discovering "how best to use the new technologies as practical, educational and cost effective tools." Further the report suggested that universities were also responsible for developing positive approaches to those "common and major transformations in their teaching, structures and cultures as the technologies increasingly affect most aspects of their operations" (Moran, 1995, P4). With such explicit expectations being placed upon university teaching generally, the responsibility for teacher education faculties to propagate a more far reaching cultural change in the teaching profession with each new generation of school teachers, is both immediate and paramount.

In recognising the importance of creating a defensible paradigm for the new culture of teaching brought about by the advent of appropriate information and communications technologies in educational settings, and the reliance upon partnerships sharing the responsibility for such a change, universities and school partnerships have begun to carve out pathways capable of becoming models for others to emulate.

In line with this theoretical and policy framework then, the remaining sections of this paper contain a selection of brief case studies illustrating the combined value of adopting appropriate technologies, incorporating functioning partnerships and developing innovative organisational arrangements in pursuing this new culture of schooling. These case studies describe innovations in technology use and organisational approaches relating to the enhancement of education and training in rural areas. It is the combined results of partnerships

of this type that are creating a foundation appropriate for schooling in the twenty -first century

Integrating Technology and Teaching: CDROM and Problem based Learning for the professional development of teachers. (Gibson and Albion, 1996)

Funded by an Australia wide competitive grant from the National Priority Reserve Fund related to teacher education, this project was conceived to integrate the best of interactive CDROM technology with a variety of examples of good teaching practice from the field of primary education. This project represented a successful attempt to provide professional development support to teachers who were interested in learning how to integrate technology into their classroom activities. Initially aimed at pre-service teacher education students who were completing their final year of university, this project was based upon the problem based learning paradigm that was an integral component of their course. With a strong emphasis upon a diagnostic, information gathering and solution generating approach to solving problems presented, this highly interactive CD-ROM used problems related to everyday teaching considerations such as physical setting, planning for teaching with technology, effects on pedagogical style, classroom management, technology sharing and school organisational issues to introduce the impact of technology in a contextualised fashion to non-technology using teachers.

With a strong emphasis upon the use of video extracts, teacher made materials, school and systemic documentation, and scenario development constructed from existing teaching settings, this CD-ROM replicates the reality of classroom decision making situations in simulated scenarios that are reminiscent of real life teaching, with the added bonus of an adventure game format. Decision points throughout the users progress in each of the problems presented will provide access to a large variety of resources, appropriate to the problem, in the form of conversations with teaching colleagues, visits to other classrooms, interviews with teachers and principals, planning documents, articles describing best teaching practice and research, and video and audio data bases related to a variety of appropriate topics.

Use of this CD-ROM is expected to result in desirable changes in the level of comfort and expertise in technology usage by non-technology using teachers in the form of

1. increased confidence in their capacity to use technologies for teaching

2 increased ability to plan effectively for the use of technologies in teaching

3 increased ability to relate theory to practice when analysing and commenting upon classroom applications of technologies

This interactive resource is a product of collaboration between large numbers of practicing teachers, administrators, school communities, university based production technicians and the researchers who are the project directors. This project is a prime example of the positive results of active collaboration between a variety of agencies using partnerships and technology to enhance learner opportunities in classrooms.

New Directions in Open Learning: Introducing information technology to rural high schools (Postle, Gibson, & Sturman, 1995)

In a joint project between three rural high schools and The University of Southern Queensland, a group of researchers are studying the process whereby previously non technology using teachers adapt to the presence of computers, access to the internet, electronic mail and voice communications in their classrooms. Focusing upon changes required in planning, pedagogical approaches, classroom management and professional development, this project is designed to produce a grounded understanding of issues related to technology integration that can then be fed back into the development of appropriate pre-service teacher education programs and the provision of professional development programs for practicing teachers.

Despite the promise that various communication and information technologies offer to schools, their potential is not being widely realised. Technology use in schools has yet to be tied to agendas for teaching and learning on a large scale. An aim of this project is to study the impact of integrating technology use with school based learning and teaching and to attempt to determine the degree of change likely to the predominant teaching paradigm. The key objective of the project is to measure the costs and benefits of the impact of technology on student learning, the management of learning in schools, the administration of schools, the roles and responsibilities of teachers, and the training of teachers.

Based upon a low-end hardware configuration featuring a computer capable of running the Electronic Classroom graphical transfer software program, graphical and textual scanners, digital cameras, a conference phone and the provision of two normal telephone lines to carry data and voice signals between participating organisations, this project is designed for ease of

use and ease of acquisition of existing communications infrastructure in order to encourage the involvement of other schools in the project.

Designed as a longitudinal study based upon university grant monies, the project provided basic equipment for school use and covered the cost of connection time for the first year or so. Both the university and the school system provided the necessary technological support structures that would be required from time to time. Each school was then to design both program usage and develop curriculum and policy directions for school usage. Apart from skill instruction on the equipment and software, little direction was provided on programmatic issues or issues related to teacher decision making.

Using a predominantly constructivist theoretical framework to guide this project, the first year of activity has seen evidence of enhanced student learning outcomes, a clear increase in access to previously unavailable teaching and learning resources and human expertise, critical reflection and evaluation of the development and implementation of alternative models for instruction, opportunities for access to alternative field experience for preservice teacher education students and a greater regard for partnerships in the learning process between schools, the university and community agencies.

Further results evident at this early stage apart from the obvious benefits of having staff and students trained in the use of communications and information technology has been the natural incorporation of the internet into classroom resource planning, a clear development of both teacher and learner skill in integrating information and communication technologies into the learning process, allowing students to exert control over their own learning and teachers to confidently manage technology-based learning, and an awareness of the potential and value of bringing together students from all over the world for collaborative projects and shared information.

After the first year of the project it was discovered that great variation occurred between schools in the style, direction and frequency of usage of this resource. The original conception of the project directors at the university has changed dramatically, and while the role of the Electronic Classroom software was designed to be central to the activity, each school has tended to focus their activities on intensive use of the internet and electronic mail. Computer usage has been accepted in each school as a crucial component of their view of schooling and each location has developed both policy and budget processes designed to support the

continued use of technology in their educational programs. The technology is now being seen as a tool designed to assist learning as opposed to being the object of instruction.

One of the target schools has developed relationships with schools in a variety of international contexts and has also begun to incorporate interactions with cohorts of pre-service teacher education students at the university as part of their educational program.

Windows into Classrooms - Two way interactive television and problem based learning (Gibson & Gibson, 1996, 1995a, 1995b, 1995c)

The "Windows into Classrooms" project used two way interactive television linkages with small rural schools and a problem based learning instructional approach to consolidate the concept and skill development of final year preservice teacher education students in their understanding of the teaching role in small rural schools. Focusing on curriculum planning and preparation for teaching in multigrade rural classrooms, students observed and reflected upon the problem solving activity and decision making processes displayed by practicing teachers in real time, televised, teaching sessions in remote locations, and then discussed with those teachers, via the technology, the thinking, planning and decision making processes which supported the activities observed.

In past offerings of this class, attempts to bring this real-life element into the program have been made through the use of problem based scenarios of day-to-day dilemmas faced by the beginning teacher. This project is a natural extension of the problem based activities that have evolved from work done by staff and students in the final year practicum unit in previous years.

The incorporation of interactive technology increased both the real time involvement of student teachers in their chosen profession, and also allowed student teachers to gain increased access to best practice, teacher decision making and the observation of real time, everyday situations being handled, analysed and reflected upon by teachers responsible for the decisions being made. The focus upon a problem solving approach to teaching immersed the student teacher in situations derived from real teaching environments, and encouraged the collegial analysis of problem situations and the sharing of solutions and various perspectives on a single situation.

The immediacy and spontaneity of these interactive sessions created a highly motivating learning environment for student teachers, and coincidentally, a situation in which participating teachers and school pupils and their rural communities benefited in terms of professional development activities, opportunities for reflection and self-improvement, greater awareness of and comfort with technology use in classrooms and a cohesiveness in community relations that went far beyond expectations. An additional and unique aspect of this project was the concept of using distance education technology for the instruction of internal, on-campus students. That is, by simulating a window of a classroom, on-campus students experienced the realities of day-to-day teaching in a variety of remote rural locations.

At the conclusion of this project, it became very clear that great benefits had occurred for every participant in the process. All agencies and individuals involved, the remote school communities, pupils and teachers, the university based project directors, technicians and support personnel, the state department of education personnel who provided their assistance and expertise and the many observers from agencies spanning a variety of educational orientations and levels both contributed and benefited. This project was dependent upon collaboration and the establishment of clearly articulated partnership objectives from conception to conclusion.

Negotiated Pre-service Internships and the Technology Resource Centre: The University of Lethbridge, Alberta, Canada

The University of Lethbridge, Alberta, Canada has a formal partnership with local schools for their internship students. The students are able to negotiate directly with the school to set up an experience that will benefit all parties. Local partnerships ensure that local needs are met, that arrangements can be negotiated appropriately and that theory and practice are fully integrated.

One student at Jennie Emory Elementary School negotiated an experience in the area of Information Technology which allowed the student to utilise his expertise, expand his teaching skills and the school to establish a technology focus. One third of the student's negotiated program was spent teaching a Year 3/4 class. The student used a second third of the program to set up the school's Technology resource centre, write a school policy and program for information technology and provide staff inservice through staff meetings and individual training. This component was particularly effective as all staff were allocated a

laptop to assist with the integration of technology into the school curriculum. The final third of the program allowed the student to work alongside all staff in their own class time when they were implementing the technology curriculum.

Each school setting involved in the program negotiates the parameters of the partnership with the Faculty of Education. An interview process is used to identify the student best suited to the proposed program. School and university benefits are negotiated to allow appropriate levels of involvement, staff release and effective use of all resources available.

International Partnerships and International Practicum Experiences: Faculty of Education, Montana State University, Bozeman, Montana, USA

The Faculty of Education at Montana State University, Bozeman has developed a partnership with various schools in New Zealand and Europe. Collaboration on this project has provided partnership opportunities which provide global experiences for the students and the local communities they visit.

Throughout the final Semester the preservice students are able to opt for an elective in International Education which allows them to complete their final practicum in one of the participating schools. Schools are identified by university staff and support mechanisms are negotiated to ensure the students have an appropriate opportunity to complete the experience.

The students are given information on the travel, education system and setting appropriate to their school placement. The schools provide the students with an opportunity to complete the practicum in this way and assist the students to find accommodation in the local community. This is a collaborative approach to providing practical opportunities for preservice teachers. The benefits received by each participant in the partnership ensure its continuation for many years.

Local off campus programs for rural pre-service students: Lews Castle College, Isle of Lewis, Scotland.

Lews Castle College on the Isle of Lewis in the Western Isles of Scotland offers some of their courses through the developing University of the Highlands and Islands (UHI). This is a partnership which allows students in rural and remote settings to complete their education without leaving their communities. This unique structure allows modes of delivery ranging from attendance at the nearest college site to remote learning facilities. Some courses allow

tutors to travel to remote centres and provide on-site training whilst others utilise the UHI network of facilities such as video conferencing, email, telephone tutorials etc. to access their course material. This partnership is being advanced by a network of colleges and research institutions, supported by local authorities.

The development of UHI has encouraged local involvement to meet local needs. This is not the "expert" importing a course that does not meet the local needs but rather a partner catering for the diverse range of needs for isolated students through a classroom without walls. This partnership allows a flexible approach to the access and provision of education.

Partnerships, pre-service education and rural experience: Faculty of Education, University of Southern Queensland, Australia.

The Faculty of Education at USQ has developed a number of partnerships to enable preservice teachers to experience teaching in rural and remote settings. Funding has been provided by PCAP, ICPA and the Educational Development Group of Unilink, USQ to help students to travel to more isolated areas of the state. Local school communities and ICPA families provide accommodation and meals to allow the students to complete a variety of experiences from 3 to 6 weeks in their schools. Schools of Distance Education, one and two teacher schools and P-10 Campuses have provided practicum opportunities for all graduating students in Primary and Early Childhood courses. Some partnerships have developed informally where others have been a regular, ongoing occurrence.

Partnerships of this nature allow an ongoing commitment to the preparation of preservice teachers for rural and isolated settings. The partnerships allow students to explore the experiences of teaching in rural communities and help them consider a career option as they move forward in the profession. These partnerships allow rural communities to showcase the unique characteristics of teaching in rural schools and to provide opportunities for interaction between the school community , preservice teachers and the university. The partnerships allow the university to expand the variety opportunities for practical experiences for students and indicate a commitment to the provision of quality education in rural areas.

Developing an Understanding of Partnerships and Protocols: A conference workshop activity. Society for Provision of Education in Rural Australia Annual Conference, Adelaide, 1997.

'Partnerships in Teacher Education' a recent report from the Board of Teacher Registration, Queensland (1997) explores both considerations for success and barriers to implementation in successful partnerships. The report highlights the need for shared decision-making and responsibility and for a collaborative planning process involving all parties. Assuming these, the report continues by emphasising the likelihood of achieving a professional outcome to successful joint ventures if the following significant variables are included in the process: careful planning; collaboration from all parties; effective communication; adequate resourcing, shared goals; and strong commitment.

In emphasising these collaborative requirements as pre-requisites for success, the report outlines some logical barriers to achieving successful outcomes for any partnership: poor planning; unclear aims; poor communication; poor resourcing; and unbalanced commitment.

In recognising these truths, workshop participants, involving teachers, administrators, community members and tertiary educators, discussed their views on partnerships in relation to their own specific field of education. The discussion was initially structured to cover the following points:

- The need for partnerships
- Descriptions of existing partnerships
- Recommendations for future partnerships
- The place of partnerships
- Structure for partnerships

Results of these discussions produced a list of key features contributing to successful partnerships. These key features included:

- The importance of having agreed common goals and shared values, so that all members are empowered to achieve a successful outcome. The partnership must be seen to be useful to both parties, with free flowing communication.
- Negotiation, collaboration and equitable participation.

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- The need for each party to have an equal footing and the recognition that trust must underscore the partnership from all parties. Partners must work to maintain trust and keep the commitment or hand over to other appropriate parties to continue the partnership.
- The expectations that mature partnerships would allow roles to rotate according to need.
- The recognition that partners must be prepared to devote time, keep promises and demonstrate sensitivity.
- The need for all members of the partnership to have equal membership no matter what they contribute.
- An understanding that too often partnerships are rushed and must be given time to develop through a variety of recognised stages of maturation.
- The ability for partnerships to grow and change, releasing original members and recruiting new partners.

Throughout the discussion workshop participants described barriers that might hinder the success of a partnership. These barriers included:

- Poor communication and non- sharing of values and intentions.
- Existence of the "expert syndrome' instead of equal footing within the partnership
- The initiator being placed in the role of the expert while others became recipients
- The expert at one end imparting knowledge to others at the other end
- Lack of time or over commitment to other projects
- Insufficient funding to achieve partnership goals
- Institutional jealousies
- Demographic imbalances
- Poor management and support of communications technologies

It became clear during the workshop discussion that the promotion of a true partnership was dependent upon partners sharing ownership and responsibility and the understanding that shared funding and shared outcomes may require different inputs from each party with consideration of the skills, knowledge and resources of all partners. It was further recognised by these participants that in allowing partnerships to be flexible, to grow, or to change, the likelihood of successful outcomes was increased, even if priorities changed throughout the life of the partnership.

It was clear to this group of diverse educators that those involved in school settings would be increasingly required to develop the skill, knowledge and ability to participate in a variety of partnerships between school communities, and other professional bodies. It was thought that consideration of the ideas identified here would help ensure that such future partnerships would be successful.

Conclusion

The process whereby schools go about their business is undergoing tremendous change. Those schools choosing to ignore the potential and value of interactive technologies, productive partnerships and the consequent innovative climate that results are bound to fall behind in maintaining defensible levels of accountability to their learning clientele and their supporting communities. Australian schools and universities today must embrace the challenge of providing high quality and flexible access to education for all students regardless of their location. It is the appropriate use of new teaching technologies and a collaborative approach to education that hold the key to this challenge.

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